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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,162	11/19/2003	Ho Chong Park	P69227US0	3888

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EXAMINER
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SWERDLOW, DANIEL

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/716,162

**Applicant(s)**

PARK ET AL

**Examiner**

Daniel Swerdlow

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-21 and 25-27 is/are rejected.
- 7) ☒ Claim(s) 5-7 and 22-24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 3, 8 through 11, 13, 14, 16 through 18, 20, 21, 25 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Marchok et al. (US Patent 6,526,140).

3. Regarding Claim 1, Marchok discloses a voice processing unit comprising: an echo canceller (Fig. 3, reference 304, 306; column 4, lines 21-22); a jitter buffer (i.e., input buffer) at the input side of the echo canceller (column 13, line 68 through column 14, line 2); a noise reduction unit (i.e., noise canceller) (Fig. 3, reference 308; column 4, lines 21-24); an ALC (i.e., level controller) (Fig. 3, reference 312; column 4, lines 26-28); and a speech encoder (i.e., compression module) (Fig. 3, reference 316; column 4, lines 26-28).

4. Regarding Claim 2, Marchok further discloses: variable rate compression (column 5, lines 18-22; column 11, lines 33-36); voice activity determination based on speech encoder parameters (i.e., determination of whether speech exists in a compression operation) (column 6, lines 1-8); and use of the voice activity determination by the echo canceller (i.e., generation and output of speech signal determination information to the echo canceller) (column 5, lines 16-27).

5. Regarding Claim 3, Marchok further discloses: voice activity determination based on speech encoder parameters and use of the voice activity determination by the echo canceller (i.e.,

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generation and output of characteristic information to the echo canceller) (column 5, lines 16-27; column 6, lines 1-8).

6. Regarding Claim 8, Marchok further discloses: a speech decoder (i.e., decompression module) (Fig. 3, reference 362; column 5, lines 1-3) and a lost packet handler (Fig. 3, reference 360; column 4, lines 65-68) that corresponds to the output buffer claimed.

7. Regarding Claim 9, Marchok further discloses: variable rate compression (column 5, lines 18-22; column 11, lines 33-36); use of the speech decoder output for far end voice activity detection (i.e., determination of speech in the second input signal in a decompression operation); and use of the voice activity determination by the echo canceller (i.e., generation and output of speech signal determination information to the echo canceller) (column 5, lines 16-27).

8. Regarding Claims 10, 13, 25 and 26, Marchok further discloses: a doubletalk detector (Fig. 3, reference 330; column 5, lines 16-27); an adaptive filter (Fig. 3, reference 306; column 5, lines 16-27); an adder (i.e., operator for producing a difference between the sum signal and the predicted echo signal) (Fig. 3, reference 304; column 4, lines 21-22); a nonlinear processor (Fig. 3, reference 310; column 4, lines 22-24); and use of the voice activity determination by the doubletalk detector and the adaptive filter (Fig. 3, reference 330, 306; column 5, lines 16-27).

9. Regarding Claim 11, Marchok further discloses: use of the speech decoder output for far end voice activity detection and use of the voice activity determination by the echo canceller (i.e., generation and output of characteristic information from the decompression module to the echo canceller) (column 5, lines 16-27).

10. Regarding Claim 14, Marchok further discloses: a doubletalk detector (Fig. 3, reference 330; column 5, lines 16-27); an adaptive filter (Fig. 3, reference 306; column 5, lines 16-27); an

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adder (i.e., operator for producing a difference between the sum signal and the predicted echo signal) (Fig. 3, reference 304; column 4, lines 21-22); a nonlinear processor (Fig. 3, reference 310; column 4, lines 22-24); and use of the voice activity determination by the doubletalk detector in the noise reducer by way of the noise estimator (Fig. 3, reference 330, 332, 308; column 10, lines 33-46).

11. Claim 16 is essentially similar to Claim 1 and is rejected on the same grounds.
12. Claim 17 is essentially similar to Claim 8 and is rejected on the same grounds.
13. Claim 18 is comprehended by claims 3 and 11 and is rejected on the same grounds.
14. Claim 20 is comprehended by claims 10, 13 and 14 and is rejected on the same grounds.
15. Claim 21 is comprehended by claims 2 and 9 and is rejected on the same grounds.

### *Claim Rejections - 35 USC § 103*

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 4, 12, 15, 19 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marchok in view of Park et al. (US Patent 6,181,794).
18. Regarding Claims 4 and 12, Marchok further discloses use of pitch information (column 6, lines 4-6). Therefore, Marchok anticipates all elements of Claims 4 and 12 except use of CELP encoding. Park discloses the use of CELP encoding in conjunction with echo cancellation (Fig. 3, reference 20, 30; column 4, lines 64-65). Park further discloses that the use of CELP

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encoding improves performance of the echo canceller (column 4, lines 65-67). It would have been obvious to one skilled in the art at the time of the invention to apply CELP encoding as taught by Park to the unit taught by Marchok for the purpose of improving performance of the echo canceller.

19. Regarding Claims 15 and 27, as shown above apropos of Claims 1 and 8, Marchok anticipates all elements of Claims 15 and 27 except a buffer interval between 10 and 30 msec. Park discloses the use of a 20 msec frame unit (column 5, lines 1-3). Park further discloses that the use of a 20 msec frame unit improves performance of the echo canceller (column 5, lines 1-3). It would have been obvious to one skilled in the art at the time of the invention to apply the 20 msec frame unit taught by Park to the unit taught by Marchok for the purpose of improving performance of the echo canceller.

20. Claim 19 is comprehended by claims 4 and 12 and is rejected on the same grounds.

***Allowable Subject Matter***

21. Claims 5 through 7 and 22 through 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. The following is a statement of reasons for the indication of allowable subject matter:

23. Regarding Claim 5, as shown above apropos of Claim 4, the combination of Marchok and Park makes obvious all elements of that claim. In addition, a CELP encoder inherently calculates a parameter quantization error associated with characteristic information and calculates an error between an input signal and a recovered signal. However, the prior art fails to

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disclose or suggest the use of the error signals to generate compression performance information to a noise canceller or level controller.


- 24. Claims 6 and 7 are allowable matter due to dependence from Claim 5.
- 25. Claim 22 is essentially similar to Claim 5 and is allowable matter for the same reasons.
- 26. Claims 23 and 24 are allowable matter due to dependence from Claim 22.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Swerdlow whose telephone number is 571-272-7531. The examiner can normally be reached on Monday through Friday between 7:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh H. Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Daniel Swerdlow  
Examiner  
Art Unit 2644

ds  
13 May 2005